

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A pre-decoder for a turbo decoder for decoding a turbo code consisting of a data symbol stream and a plurality of parity symbol streams, parts of which are punctured, the pre-decoder comprising:

an arithmetic unit for carrying out, ~~a same algorithm~~ with respect to a ~~binary-coded~~ binary-converted data bit stream, the same algorithm that ~~the~~ a turbo encoder performs for generating parity bit streams, and generating ~~an estimation value of the~~ estimated parity bit streams;

a comparison unit for comparing non-punctured bits of ~~[[the]]~~ binary-converted parity bit streams with the ~~estimation value~~ estimated parity bit streams generated by the arithmetic unit;

a modulation unit for modulating the ~~estimation value of the~~ estimated parity bit streams ~~generated by the calculation unit to the~~ into estimated parity symbol streams; and

a recovery unit for recovering punctured parts of the parity symbol streams by substituting ~~the punctured parts of the parity symbol streams for values of symbols of the~~ estimation values corresponding to the estimated parity symbol streams for corresponding punctured parts of the parity symbol streams, when ~~the respective~~ related non-punctured bits of the binary-converted parity bit streams are identical with ~~the bits of the estimation values~~

corresponding bits of the estimated parity bit streams, according to a comparison ~~result~~ results of the comparison unit.

2. (Currently Amended) The pre-decoder as claimed in claim 1, wherein, ~~when it is determined that different bits exist according to the~~ if a comparison result of the respective non-punctured bits of the parity bit streams and the bits of the estimation values by the comparison unit indicates disagreement, the recovery unit assigns a predetermined value to a symbol of the punctured parts of the parity symbol input after a symbol corresponding to the different bits.

3. (Currently Amended) The pre-decoder as claimed in claim 1, wherein the arithmetic unit includes a plurality of recursive systematic convolutional (RSC) blocks corresponding to the number of the parity symbol streams, and at least one interleaver for interleaving the binary-converted data bit stream and providing the interleaved binary-converted data bit stream to at least one of the RSC blocks.

4. (Currently Amended) The pre-decoder as claimed in claim 1, further comprising a binary-coding binary converter unit for generating the binary-coded binary-converted data bit stream and the binary-converted parity bit streams by ~~binary-coding~~ binary converting the data symbol stream and the parity symbol streams, and providing the binary-coded binary-converted data bit stream and the binary-converted parity bit streams to the arithmetic unit and the comparison unit, respectively.

5. (Currently Amended) The pre-decoder as claimed in claim ~~[[1]]~~ 4, further comprising a demultiplexer for separating the turbo code ~~transferred~~ output from a demodulator into the data symbol stream and the parity symbol streams and providing the data symbol stream and the parity symbol streams to the binary converter unit ~~arithmetic unit and the comparison unit~~, respectively.

6. (Currently Amended) A method for recovering a turbo code consisting of a data symbol stream and a plurality of parity symbol streams, parts of which are punctured, the method comprising the steps of:

extracting a data symbol stream and a plurality of parity symbol streams from a received turbo code;

calculating ~~an estimation value of~~ estimated parity bit streams by carrying out, ~~an~~ ~~algorithm~~ with respect to a binary-converted data bit stream corresponding to the extracted data symbol stream, the same algorithm ~~being~~ used by a turbo encoder for producing the parity bit streams corresponding to the extracted parity symbol ~~stream~~ streams;

comparing ~~the~~ binary-converted parity ~~bit~~ symbol streams corresponding to the parity symbol streams with the ~~estimation value~~ estimated parity bit streams;

modulating the estimated parity bit streams into estimated ~~estimation value to the~~ parity symbol streams; and

substituting ~~the punctured parts of the parity symbol streams for a value of a symbol of~~
~~the estimation values corresponding to the~~ symbols of the estimated parity symbol streams for
corresponding punctured parts of the parity symbol streams, when ~~the respective~~ related bits of
the binary-converted parity bit streams are identical with ~~the bits of the estimation values~~
corresponding bits of the estimated parity bit streams according to a comparison ~~result~~ results of
the comparison step.

7. (Currently Amended) The method as claimed in claim 6, further comprising a step of,
~~in the case that different bits exist as~~ responsive to the comparison result of non-equality in the
comparison step, assigning a predetermined value to a symbol of the punctured symbols ~~input~~
~~after a symbol corresponding to the different bits.~~